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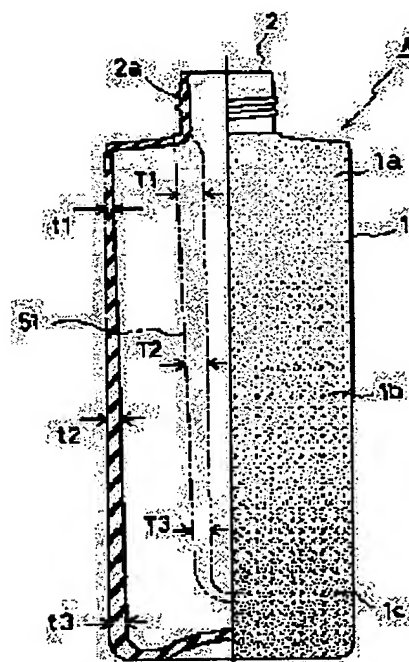
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(54) GRADATION BLOW MOLDING CONTAINER

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a blow molding container, the decoration of which can be easily executed in a blow molding process without necessitating a special process, resulting in checking a production cost.

SOLUTION: This gradation blow molding container A is a blown container, which is manufactured by an injection blowing system and patterned by shade of color due to partially different wal thicknesses t_1 , t_2 and t_3 by blowing a parison of a semitransparent and colored resin and injected in advance so as to have partially different wall thicknesses T1, T2 and T3.



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CLAIMS

[Claim(s)]

[Claim 1] The gradation blow container characterized by attaching a pattern that change thickness partially and it is based on the shade of a color by being the blow container manufactured by injection blow, preparing a thick difference in injection by colored translucent resin beforehand at parison, and blowing after that.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the blow container which was applied to the translucent container manufactured by blow molding, especially attached the thick difference, and attached change of a color.

[0002]

[Description of the Prior Art] There is an approach called a direct blow method to an injection blow method list among the manufacture approaches of a blow container. These methods form first the parison which is the resin object of the shape of a stick with a neck which is a middle manufacture with injection molding. And the container of a predetermined configuration is formed by pouring in air and expanding this parison from opening of a neck, in a mold.

[0003]

[Problem(s) to be Solved by the Invention] Usually, in the manufacture phase of a blow container, parison fabricates thickness to homogeneity and is expanding this after that so that poor shaping may not be caused. For this reason, generally a blow container is formed by the thickness with the same whole.

[0004] On the other hand, with the container with which appearance designs, such as a cosmetics container, are elaborated, the ornament of the shade of a color etc. is given in many cases. Although sticking for example, an ornament film outside, or painting it was also considered with the blow container in order to perform this ornament, the production process of all increased, and it became complicated, and there was a trouble that a production cost will also go up.

[0005] Then, this invention can perform the ornament of a blow container easily in a blow molding process, without needing a special process, and aims at offering the blow container which can also press down a production cost.

[0006]

[Means for Solving the Problem] The gradation blow container concerning this invention is a blow container manufactured by an injection blow or the direct blow method, and solves the above-mentioned technical problem by attaching a pattern that change thickness partially and it is based on the shade of a color by preparing a thick difference in parison beforehand at the time of injection by colored translucent resin, and blowing after that.

[0007]

[Embodiment of the Invention] The operation gestalt of this invention is explained based on drawing 1 and drawing 2. The gradation blow container (only henceforth a blow container) A of this operation gestalt is a translucent container with which it applies caudad from the upper part, and transparency becomes low gradually. The sectional view where drawing 1 made the cross section some blow containers of this operation gestalt, and drawing 2 are the explanatory views showing the production process of this blow container.

[0008] As shown in drawing 1, the blow container A of this operation gestalt is a translucent cylinder container formed with colored resin, the blow container A follows the body 1 of a container in the upper part, and the neck 2 by which screw ** 2a was formed in the circumferential flank is formed in one. Blow molding of this blow container A is carried out using colored translucent resin, such as PET, so that it may mention later.

[0009] Each thickness t_1 , t_2 , and t_3 of shoulder 1a, drum section 1b, and pars-basilaris-ossis-occipitalis 1c is thick gradually, and this body 1 of a container is formed. For this reason, it has the gradation pattern to which it applies to pars-basilaris-ossis-occipitalis 1c through shoulder 1a to drum section 1b, and a color becomes deep gradually according to that thick difference.

[0010] In addition, in this drawing, what is shown with the broken line of a cross-section part is a sectional view of the middle manufacture slack parison 51 processed into the body 1 of a container. Although the body 1 of a container is formed by blowing parison 51 and expanding it by the production process mentioned later, each thickness T_1 , t_1 , T_2 and t_2 , and T_3 and t_3 have the correspondence relation of the thickness before and behind blow processing.

[0011] The manufacture approach of the blow container A is explained using drawing 2. When a production process is outlined, it is the injection-molding mold 100 first. Parison 51 is formed (drawing 2 (a)), this is taken out (drawing 2 (b)), and it is the blow mold 200 about this parison 51 further. Blow processing is inserted and carried out and, finally the blow container A is formed (drawing 2 (c)).

[0012] Drawing 2 (a) Injection-molding mold 100 for fabricating parison so that it may be shown Core locating plate 101 Cavity mold 102 Base mold 103 Core mold 104 It is combined and constituted.

[0013] Core locating plate 101 It is the board which had opening 101a in the center, and is the cavity mold 102. It receives and is fixed to a position. Cavity mold 102 It has gate 102a which injects resin, and cavity 102b which follows this is formed. Moreover, this cavity mold 102 To the other end of gate 102a, it is the base mold 103. It fits in and crevice 102c which follows cavity 102b is formed.

[0014] Base mold 103 It is the ring formation which had opening 103a in the center, and slot 103b for screw formation is cut by the inner skin of opening 103a. And core 104 It is a rod-like mold and is the core locating plate 101 about the base 104a. By fixing to opening 101a, it is the cavity mold 102 about core body 104b. It has structure which is fixable to the predetermined location in cavity 102b.

[0015] The space S constituted by core body 104b and cavity 102b has a cylinder-like configuration, and is the base mold 103. It is so thin [it is thick at a side, and] that it goes at a tip.

[0016] As described above, they are these core locating plate 101, the cavity mold 102, the base mold 103, and the core mold 104. It is the cavity mold 102 about the colored translucent resin which dissolved where setting up is finished. When it injects from gate 102a, the above mentioned space S will be invaded and filled up with resin, and parison will be formed.

[0017] Next, injection-molding mold 100 It decomposes and is the base mold 103 about this parison 51. It takes out. Drawing 2 (b) The parison 51 formed so that it might be shown is the base mold 103. The near thickness T_1 is thick and it has a cross-section configuration which becomes thin by thickness T_3 by the side of a tip. in addition, base mold 103 the neck 2 of the blow container formed inside -- screw ** 2a and base mold 103 since slot 103b for screw formation has geared -- parison 51 -- base mold 103 from -- it does not drop out

[0018] And drawing 2 (c) It is the blow mold 200 in the condition of having heat for parison 51 and having plasticity so that it may be shown. Blow processing is incorporated and carried out. blow mold 200 Air installation mold 201 Rod positioning guide 203 Cavity mold 202 Bottom plate 204 Extension rod 205 from -- it is constituted.

[0019] Air installation mold 201 Extension rod 205 Rod positioning guide 203 which has rod insertion opening 203b It is inserting in opening 201b of a center section. and these air installation mold 201 And rod positioning guide 203 **** -- extension rod 205 The air installation ways 201a and 203a which are open for free passage inside parison 51 through the side are formed.

[0020] Cavity mold 202 The above mentioned base mold 103 It has crevice 202a to insert and is a bottom plate 204 further. It has cavity side 202b which constitutes blow space with medial-surface 204a. Moreover, extension rod 205 It is the cylindrical material which has predetermined die length.

[0021] Extension rod 205 Rod positioning guide 203 It inserts into parison 51 from insertion opening 203b, and parison 51 is expanded from the inside by blowing air into coincidence from the air installation ways 202a and 203a. Parison 51 is the cavity mold 202. It expands to a limit inside and the body 1 of a container of a predetermined configuration is formed.

[0022] Here, it has the structure which becomes thick gradually, applying the thickness of the body 1 of a container by which blow molding was carried out from parison 51 to pars-basilaris-ossis-occipitalis 1c

through shoulder 1a to drum section 1b ($t_1 < t_2 < t_3$). That is, the relation of the relation ($T_1 > T_2 > T_3$) of the thickness which applied at the tip from the base mold side in the state of parison 51, and was becoming thin gradually is reversed.

[0023] Since the thick part (base mold side) is maintaining high temperature to hardening of resin progressing that heat tends to escape, when the part (tip side) to which this became thin in the state of parison 51 carries out blow processing, it is because it is easy to extend and this part becomes thin as a result.

[0024] the last -- blow mold 200 decomposing -- the body 1 of a container -- twisting -- base mold 103 from -- by separating Container A, a series of production processes can be ended and the blow container A shown in drawing 1 can be manufactured. It is [the blow container A fabricated by colored translucent resin as described above] easy lack of hiding by shoulder 1a with thin thickness, and a color serves as a container with a deep gradation pattern that a color is thin and it is hard to be transparent by thick pars-basilaris-ossis-occipitalis 1c.

[0025] As explained above, the blow container A of this operation gestalt is manufactured so that the thick difference may change, and a pattern is formed simply, without adding other special production processes. Especially, with this operation gestalt, adjustment of this thick difference is enabled by performing thickness adjustment of parison 51 like this operation gestalt.

[0026] In addition, at this operation gestalt, it is the injection-molding mold 100. It is the blow mold 200 in succession after shaping of the parison 51 to depend. Although the method which performs blow processing to depend was explained As long as it is blow processing which forms parison as a middle manufacture, it is not necessarily restricted to this, and may carry out by concentrating the fabrication operation of parison by which injection molding was carried out, and the method which reheats the fabricated parison and carries out blow processing may be taken after that.

[0027] Other operation gestalten of the blow container of this invention are explained using drawing 3 thru/or drawing 5 . These Figs. show the variation of ***** given to a blow container.

[0028] First, the blow container B shown in drawing 3 consists of a body 11 of a container to which the pattern was given, and a neck 12 which has screw ** 12a on a circumferential side face like the blow container A shown by drawing 1 .

[0029] However, a pattern that shoulder 11a of the body 11 of a container is thick contrary to the blow container A, drum section 11b is thin (thickness t_{12} of the thickness $t_{11} >$ drum section of a shoulder), and it becomes a deep color by the shoulder is attached, and this blow container B is changed so that the boundary line of the shade of a pattern may be lenticulated further.

[0030] This becomes possible by carrying out blow processing of the parison (thickness T_{12} by the side of the thickness $T_{11} <$ tip by the side of a neck) 61 which became thick toward the tip. Moreover, the above-mentioned boundary layer pattern of a shade can be attached by forming in band-like [which lenticulates level difference section 61a from which thickness changes in the phase of parison].

[0031] The blow container C shown in drawing 4 consists of a body 21 of a container, and a neck 22 which has screw ** 22a.

[0032] this blow container C -- each thickness t_{21} , t_{22} , t_{23} , t_{24} , and t_{25} of shoulder 21a, 1st drum section 21b, 2nd drum section 21c, the 21d of the 3rd said division, and pars-basilaris-ossis-occipitalis 21e -- order -- the relation between thickness, **, thickness, **, and thickness -- becoming -- **** -- this thick difference -- corresponding -- **, **, **, and** - dark -- ** -- the striped pattern is attached.

[0033] This is in the condition of parison 71 and can attach the above-mentioned striped pattern by forming in **, thickness, **, thickness, and ** in order the thickness of the thickness T_{21} , T_{22} , T_{23} , T_{24} , and T_{25} applied to a tip side from a neck side, and carrying out blow processing.

[0034] Furthermore, drawing 5 (a) It is (b) to a list. The shown blow container D consists of a body 31 of a container, and a neck 32 which has screw ** 32a.

[0035] Drawing 5 (a) The body 31 of a container carries out a sectional view, and it is drawing 5 (b). It is the side elevation made into the cross section in part. This drawing (a) It is formed so that it may be shown and the thin thickness t_{31} and the thick thickness t_{32} may repeat by turns to the circumference of a peripheral surface, and it is this drawing (b). Corresponding to this thick difference, a pattern that it repeats 1st band-like partial 31a with a thin color, 2nd band-like partial 31b with a deep color, and by turns is

formed so that it may be shown.

[0036] This is drawing 5 (a). As shown in the chain line, it is in the condition of parison 81, and it is the vertical band-like thick thickness T31. Thin thickness T31 It forms in a configuration which becomes by turns, and it is carrying out blow processing and it becomes possible to form the pattern of a lengthwise direction. It is set to 2nd band-like partial 31b which the thick thickness T31 is extended in the state of parison 81, and has the thin thickness t31 of the body 31 of a container, and in the state of parison 81, the thin thickness T32 does not deform at the time of blow processing, but is set to 1st band-like partial 31a of the body 31 of a container which has the thick thickness t32 relatively.

[0037] Although the example of a pattern that the thick difference was established was shown in the body of a container at these drawing 3 thru/or drawing 5 , of course, other various patterns can be given to a blow container by adding change of various thickness in the state of parison to others.

[0038]

[Effect of the Invention] As explained above, according to this invention, change can be given to the thickness of the body of a container and it can consider as the blow container with which the ornament was given simply by using colored translucent resin. since [namely,] the blow container of this invention does not need the special process of the ** sake which attaches a pattern -- a production cost -- low -- also pressing down -- it can press down.

[Translation done.]

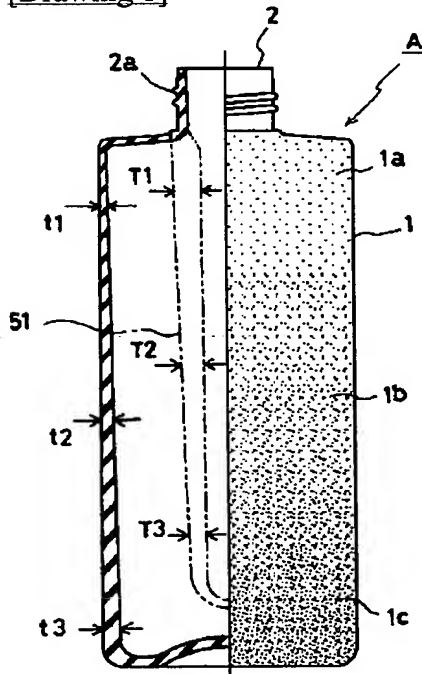
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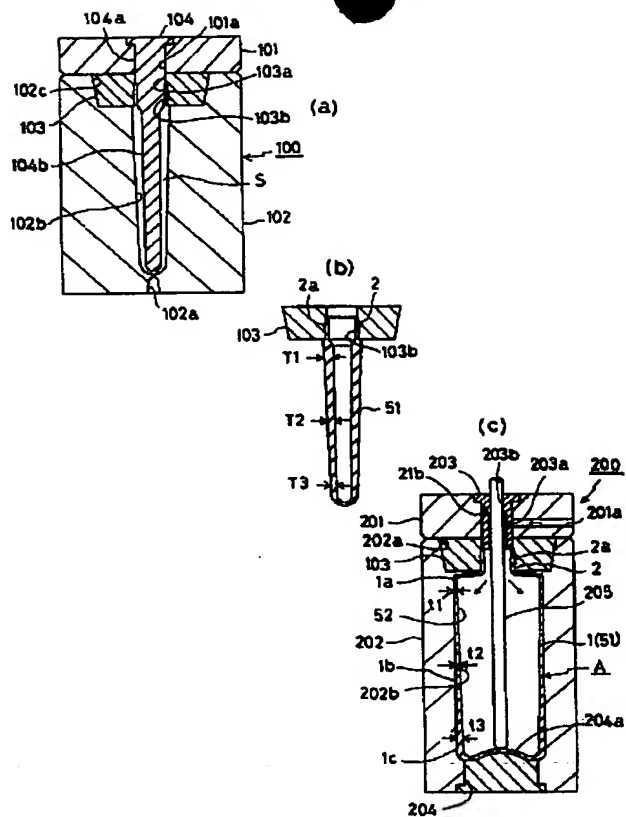
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DRAWINGS

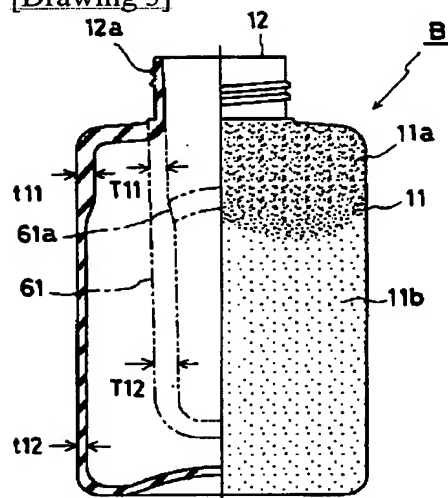
[Drawing 1]



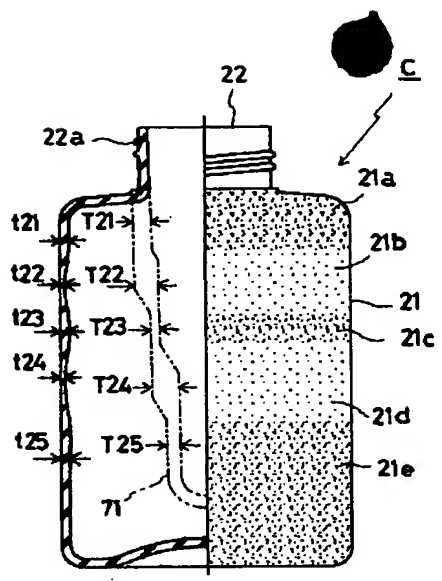
[Drawing 2]



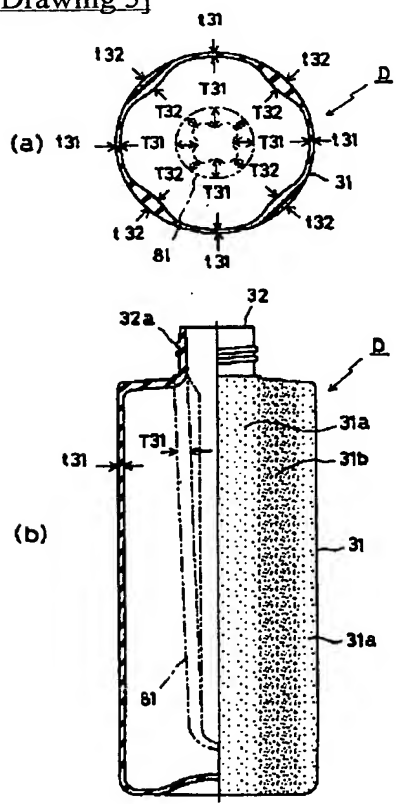
[Drawing 3]



[Drawing 4]



[Drawing 5]



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